

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Timothy S. DeBruine et al.

Serial No. 09/814,426

Filed: 03/21/2001

Examiner: Kamal B. Divecha

Art Unit: 2151

For: **METHOD AND SYSTEM FOR OPTIMIZING PRIVATE NETWORK FILE  
TRANSFERS IN A PUBLIC PEER-TO-PEER NETWORK**

Mail Stop Appeal Brief – Patents

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

Sir:

The present **REVISED APPEAL BRIEF** is filed pursuant to 37 C.F.R. § 41.37(c) to address the Notification of Non-Compliant Appeal Brief mailed July 2, 2007 by amending section (7) ARGUMENT to argue each ground of rejection under its own heading indicating statutes and authorities, section (8) CLAIMS APPENDIX to correct claim 1, and sections (9) EVIDENCE APPENDIX and (10) RELATED PROCEEDINGS APPENDIX to state “NONE.” Appellant has previously paid for the Appeal Brief, so no new fee should be required. If any additional fees are required in association with this appeal brief, the Director is hereby authorized to charge them to Deposit Account 50-1732, and consider this a petition therefor.

## **REVISED APPEAL BRIEF**

### **(1) REAL PARTY IN INTEREST**

The present application is owned by Flashpoint Technology, Inc. whose corporate headquarters are 1130 Situs Court, Suite 216, Raleigh, NC 27606.

### **(2) RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences to the best of the Appellants' knowledge.

### **(3) STATUS OF CLAIMS**

Claims 1-47 were rejected with the rejection made final on November 30, 2006.

Claims 1-47 are pending and are the subject of this appeal.

### **(4) STATUS OF AMENDMENTS**

All amendments have been entered to the best of the Appellant's knowledge. No amendments have been filed after the Final Office Action mailed November 30, 2006.

### **(5) SUMMARY OF CLAIMED SUBJECT MATTER**

In the following summary, the Appellants have noted where in the Specification certain subject matter exists. The Appellants wish to point out that these citations are for demonstrative purposes only and that the Specification may include additional discussion of the various elements, citations to which are not pointed out below. Thus, the noted citations are in no way intended to limit the scope of the pending claims.

The present invention provides a method and system for optimizing private network file transfers in a public peer-to-peer network (See Figure 1A, element 10; see also, Specification, p. 5, l. 17). The network includes a plurality of nodes (See Figure 1A, element 14; see also, Specification, p. 5, ll. 17-20) wherein at least two of the nodes are part of a private network (See Figure 1A, element 16; see also, Specification, p. 6, ll. 1-4). The method and system include receiving a search request from a first node for a file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23), and in response, determining that the file is stored on a second node (See Figure 4A, element 150; see also, Specification, p. 10, l. 23 through p. 11, l. 5). It is then determined whether the first and second nodes are part of the same private network (See

Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15), and if so, the second node is used to transfer the file to the first node over the private network (See Figure 4B, elements 164, 166, 168, 170, and 172; see also, Specification, p. 12, l. 11 through p. 13, l. 2), instead of the public network.

Claim 1 recites a method for optimizing private network file transfers in a peer-to-peer public network (See Figure 1A, element 10; see also, Specification, p. 5, l. 17), the peer-to-peer public network including a server (See Figure 1A, element 12; see also, Specification, p. 5, ll. 17-19) and a plurality of nodes (See Figure 1A, element 14; see also, Specification, p. 5, ll. 17-20), wherein at least two of the plurality of nodes are part of a same private network (See Figure 1A, element 16; see also, Specification, p. 6, ll. 1-4), the method comprising the steps of:

- (a) receiving by the server a search request from a first node of the plurality of nodes in the peer-to-peer public network for a file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23);
- (b) determining by the server that the file is stored on a second node of the plurality of nodes in the peer-to-peer network (See Figure 4A, element 150; see also, Specification, p. 10, l. 23 through p. 11, l. 5);
- (c) determining by the server that the first and second nodes are part of the same private network (See Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15); and
- (d) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network (See Figure 4B, elements 164, 166, 168, 170, and 172; see also, Specification, p. 12, l. 11 through p. 13, l. 2).

Claim 6 depends from dependent claim 2, which depends from independent claim 1, and recites wherein step (a) further includes the step of storing the client IP address, a subnet mask, and a peer IP address of both the first and second nodes in a node registry (See Figure 2, elements 104 and 106; see also, Specification, p. 9, ll. 4-10).

Dependent claim 7 further defines independent claim 1 and recites wherein step (a) further includes the step of allowing a user of the first node to enter search terms for finding a particular file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23).

Claim 8 depends from dependent claim 7, which depends from independent claim 1, and recites wherein step (b) further includes the steps of querying a database containing file names with the search terms to find file names matching the search terms, and identifying nodes containing the matching file, including the second node (See Figure 4A, element 150; see also, Specification, p. 11, ll. 2-4).

Claim 9 depends from dependent claim 4, which ultimately depends from independent claim 1, and recites wherein step (c) further includes the steps of:

- (i) determining that the second node is part of the same private network as the first node (See Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15), and therefore locally reachable by the first node, when
  - (1) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match (See Figure 4A, elements 154 and 158; see also, Specification, p. 11, ll. 11-13), or
  - (2) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match (See Figure 4A, elements 156 and 158; see also, Specification, p. 11, ll. 17-19).

Claim 11 depends from dependent claim 10, which ultimately depends from independent claim 1, and recites wherein step (c)(ii) further includes the step of sorting the search results first by locally reachable nodes followed by the directly reachable nodes (Figure 4B, element 164; see also, Specification, p. 12, ll. 11-14).

Claim 13 recites a peer-to-peer public network (See Figure 1A, element 10; see also, Specification, p. 5, l. 17), comprising

at least one server (See Figure 1A, element 12; see also, Specification, p. 5, ll. 17-19) coupled to the public network;

a first plurality of nodes (See Figure 1A, element 14; see also, Specification, p. 5, ll. 17-20) coupled to the public network;

a private network including first and second nodes of the first plurality of nodes (See Figure 1A, element 16; see also, Specification, p. 6, ll. 1-4) coupled to the public network, wherein when the server receives a search request from the first node for a file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23), the server

determines that the file is stored on the second node (See Figure 4A, element 150; see also, Specification, p. 10, l. 23 through p. 11, l. 5),

determines that the first and second nodes are part of the same private network (See Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15), and sends instructions to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network (See Figure 4B, elements 164, 166, 168, 170, and 172; see also, Specification, p. 12, l. 11 through p. 13, l. 2).

Claim 18 depends from dependent claim 17, which ultimately depends from independent claims 13, and recites wherein the client IP address, a subnet mask, and a peer IP address of both the first and second nodes are stored in a node registry (See Figure 2, elements 104 and 106; see also, Specification, p. 9, ll. 4-10).

Dependent claim 19 further defines independent claim 13 and recites wherein a user of the first node enters search terms for finding a particular file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23).

Claim 20 depends from claim 18, which ultimately depends from claim 13, and recites wherein it is determined the file is stored on the second node by querying a database containing file names with the search terms to find file names matching the search terms, and identifying nodes containing the matching file, including the second node (See Figure 4A, element 150; see also, Specification, p. 11, ll. 2-4).

Claim 21 depends from dependent claim 16, which ultimately depends from independent claim 13, and recites wherein it is determined that the second node is part of the same private network as the first node (See Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15), and therefore locally reachable by the first node, when 1) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match (See Figure 4A, elements 154 and 158; see also, Specification, p. 11, ll. 11-13), or 2) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match (See Figure 4A, elements 156 and 158; see also, Specification, p. 11, ll. 17-19).

Claim 23 depends from dependent claim 22, which ultimately depends from independent claim 13, and recites wherein the search results are sorted first by locally reachable nodes

followed by the directly reachable nodes (Figure 4B, element 164; see also, Specification, p. 12, ll. 11-14).

Claim 25 recites a computer readable medium containing program instructions for optimizing private network file transfers in a peer-to-peer public network (See Figure 1A, element 10; see also, Specification, p. 5, l. 17), the peer-to-peer public network including a server (See Figure 1A, element 12; see also, Specification, p. 5, ll. 17-19) and a plurality of nodes (See Figure 1A, element 14; see also, Specification, p. 5, ll. 17-20), wherein at least two of the plurality of nodes are part of a same private network (See Figure 1A, element 16; see also, Specification, p. 6, ll. 1-4), the program instructions for:

- (a) receiving by the server a search request from a first node of the plurality of nodes in the peer-to-peer public network for a file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23);
- (b) determining by the server that the file is stored on a second node of the plurality of nodes in the peer-to-peer public network (See Figure 4A, element 150; see also, Specification, p. 10, l. 23 through p. 11, l. 5);
- (c) determining by the server that the first and second nodes are part of the same private network (See Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15); and
- (d) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network (See Figure 4B, elements 164, 166, 168, 170, and 172; see also, Specification, p. 12, l. 11 through p. 13, l. 2).

Claim 30 depends from dependent claim 26, which depends from independent claim 25, and recites wherein instruction (a) further includes the instruction of storing the client IP address, a subnet mask, and a peer IP address of both the first and second nodes in a node registry (See Figure 2, elements 104 and 106; see also, Specification, p. 9, ll. 4-10).

Dependent claim 31 further defines independent claim 25 and recites wherein instruction (a) further includes the instruction of allowing a user of the first node to enter search terms for finding a particular file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23).

Claim 32 depends from dependent claim 30, which ultimately depends from independent claim 25, and recites wherein instruction (b) further includes the instructions of querying a

database containing file names with the search terms to find file names matching the search terms, and by identifying nodes containing the matching file, including the second node (See Figure 4A, element 150; see also, Specification, p. 11, ll. 2-4).

Claim 33 depends from dependent claim 28, which ultimately depends from independent claims 25, and recites wherein instruction (c) further includes the instructions of:

- (i) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node (See Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15), when
- (3) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match (See Figure 4A, elements 154 and 158; see also, Specification, p. 11, ll. 11-13), or
- (4) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match (See Figure 4A, elements 156 and 158; see also, Specification, p. 11, ll. 17-19).

Claim 35 depends from dependent claim 34, which ultimately depends from independent claim 25, and recites wherein instruction (c)(ii) further includes the instruction of sorting the search results first by locally reachable nodes followed by the directly reachable nodes (Figure 4B, element 164; see also, Specification, p. 12, ll. 11-14).

Claim 37 recites a method for optimizing private network file transfers in a peer-to-peer public network (See Figure 1A, element 10; see also, Specification, p. 5, l. 17), the peer-to-peer public network including a server (See Figure 1A, element 12; see also, Specification, p. 5, ll. 17-19) and a plurality of nodes (See Figure 1A, element 14; see also, Specification, p. 5, ll. 17-20), wherein a first node and a second node of the plurality of nodes in the peer-to-peer public network are part of a same private network (See Figure 1A, element 16; see also, Specification, p. 6, ll. 1-4), the method comprising the steps of:

- (a) registering with the server whether network address translation (NAT) has been performed on the first and second nodes (See Figure 2, elements 110 and 112; see also, Specification, p. 9, ll. 12-21) and whether the first and second nodes are directly reachable from other nodes on the public network (See Figure 2, elements 116 and 118; see also, Specification, p. 9, ll. 14 through p. 10, l. 3);

- (b) receiving a search request from the first node for a file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23);
- (c) determining that the file is stored on the second node (See Figure 4A, element 150; see also, Specification, p. 10, l. 23 through p. 11, l. 5);
- (d) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node (See Figure 4A, elements 152 and 154; see also, Specification, p. 11, ll. 7-15), when
  - (i) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match (See Figure 4A, elements 154 and 158; see also, Specification, p. 11, ll. 11-13), or
  - (ii) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match (See Figure 4A, elements 156 and 158; see also, Specification, p. 11, ll. 17-19).
- (e) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network (See Figure 4B, elements 164, 166, 168, 170, and 172; see also, Specification, p. 12, l. 11 through p. 13, l. 2).

Claim 42 depends from dependent claim 41, which ultimately depends from independent claim 37, and recites wherein step (d) further includes the step of sorting the search results first by locally reachable nodes followed by the directly reachable nodes (Figure 4B, element 164; see also, Specification, p. 12, ll. 11-14).

Dependent claim 44 further defines independent claim 1 and recites wherein step (a) comprises receiving by the server the search request from the first node including at least one search term identifying the file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23), and step (b) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file (See Figure 4A, element 150; see also, Specification, p. 11, ll. 2-4).

Dependent claim 45 further defines independent claim 13 and recites that the search request from the first node comprises at least one search term identifying the file (See Figure 3,



element 52c; see also, Specification, p. 10, ll. 22-23), and the server further operates to query a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file (See Figure 4A, element 150; see also, Specification, p. 11, ll. 2-4).

Dependent claim 46 further define independent claim 25 and recites wherein instruction (a) comprises receiving by the server the search request from the first node including at least one search term identifying the file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23), and instruction (b) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file (See Figure 4A, element 150; see also, Specification, p. 11, ll. 2-4).

Dependent claim 47 further defines independent claim 37 and recites wherein step (b) comprises receiving by the server the search request from the first node including at least one search term identifying the file (See Figure 3, element 52c; see also, Specification, p. 10, ll. 22-23), and step (c) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file (See Figure 4A, element 150; see also, Specification, p. 11, ll. 2-4).

## **(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

**A.** Whether claims 1, 7, 8, 13, 19, 20, 25, 31, 32, and 44-46 were properly rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0062336 A1 to *Teodosiu et al.* (hereinafter “*Teodosiu ‘336*”).

**B.** Whether claims 2-6, 9-12, 14-18, 21-24, 26-30, 33-43, and 47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Teodosiu ‘336* in view of U.S. Patent No. 6,510,154 B1 to *Mayes et al.* (hereinafter “*Mayes*”).

## **(7) ARGUMENT**

### **A. Introduction**

The Appellants submit that the pending claims are patentable over the cited references. In particular, the claims recite a server which determines that first and second nodes are part of the same private network. The Appellants submit that none of the references which are valid, either alone or even in combination, discloses or suggests a server which determines that first and second nodes are part of the same private network. At most, the cited references, which are valid, disclose a server which interacts with nodes. However, none of the references discloses or even suggests that the server determines that first and second nodes are part of the same private network.

Furthermore, *Teodosiu* '336 is not a proper reference under 35 U.S.C. §102(e) and the applications to which *Teodosiu* '336 claims priority, Provisional Application Nos. 60/252,658 and 60/252,659, do not include the subject matter relied upon by the Patent Office in maintaining the rejection of the pending claims. In addition, neither Provisional Application No. 60/252,658 nor Provisional Application No. 60/252,659 discloses or suggests all the subject matter recited in the pending claims. Moreover, *Mayes* does not overcome the deficiencies of *Teodosiu* '336 nor Provisional Application Nos. 60/252,658 and 60/252,659.

The Patent Office has also failed to establish the proper motivation for combining the cited references. Particularly, the problems and teachings of the individual references are vastly different from one another such that one skilled in the art would not be motivated to combine the references. Further, the Patent Office has failed to establish how the knowledge of one of ordinary skill in the art would provide the motivation to combine the cited references. The Patent Office has also not provided any evidence to prove the motivation to combine the references. As such, the Appellants request that the Board reverse the Examiner and instruct the Examiner to allow the claims for these reasons.

### **B. Summary of the References**

#### **1. U.S. Patent Application Publication No. 2002/0062336 A1 to *Teodosiu* '336**

*Teodosiu* '336 was filed on September 13, 2001, and claims priority to Provisional Application No. 60/252,658 filed on November 22, 2000 and Provisional Application No. 60/252,659, also filed on November 22, 2000. *Teodosiu* '336 relates generally to peer-to-peer

networking.<sup>1</sup> In particular, *Teodosiu* '336 discloses that as a peer resource is cached and made available at peer devices, a locator service tracks state information for each copy of the resources.<sup>2</sup> In addition, the locator service maintains coherency among copies as the resource is modified or deleted.<sup>3</sup>

## **2. U.S. Provisional Application No. 60/252,658 to *Teodosiu***

U.S. Provisional Application No. 60/252,658 to *Teodosiu* (hereinafter "*Teodosiu* '658"), relates to peer-to-peer networks.<sup>4</sup> *Teodosiu* '658 provides a peer-to-peer locator and tracking service.<sup>5</sup> In particular, *Teodosiu* '658 discloses a resource naming service (RNS) which allows for end-user machines to locate a peer resource.<sup>6</sup> The RNS also caches files, keeps track of existing up-to-date cached copies and tracks the availability of end-user machines.<sup>7</sup>

## **3. U.S. Provisional Application No. 60/252,659 to *Teodosiu***

U.S. Provisional Application No. 60/252,659 to *Teodosiu* (hereinafter "*Teodosiu* '659"), relates to peer-to-peer networks.<sup>8</sup> *Teodosiu* '658 provides a peer-to-peer naming scheme.<sup>9</sup> *Teodosiu* '659 extends the Uniform Resource Locator (URL) naming scheme with a distinguished set of URL's used to name peer-to-peer resources.<sup>10</sup> The naming scheme disclosed therein relies on the existence of a peer-to-peer locator service for each Domain Name System to which peer-to-peer resources have been assigned.<sup>11</sup>

## **4. U.S. Patent No. 6,510,154 B1 to *Mayes***

*Mayes* relates to address translation systems which map local Internet Protocol (IP) addresses used by hosts on a private network to globally unique IP addresses for communicating

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<sup>1</sup> See *Teodosiu* '336, paragraph [0004].

<sup>2</sup> *Id.* at Abstract.

<sup>3</sup> *Ibid.*

<sup>4</sup> See *Teodosiu* '658, page 1, first paragraph.

<sup>5</sup> *Id.* at page 3, first complete paragraph.

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*

<sup>8</sup> See *Teodosiu* '659, page 1, first paragraph.

<sup>9</sup> See *Teodosiu* '659, paragraph bridging pages 2 and 3.

<sup>10</sup> *Id.* at page 2, last paragraph.

<sup>11</sup> *Id.* at page 3, fourth paragraph.

with hosts on the Internet.<sup>12</sup> *Mayes* provides a system which employs a Network Address Translation protocol in conjunction with an adaptive security algorithm to keep unwanted packets out of a private network.<sup>13</sup> According to *Mayes*, a first network address on a packet that matches a second network layer address in an address translation list is identified.<sup>14</sup> The matched network address is then translated to a corresponding third network layer address and the packet is matched against a security criterion.<sup>15</sup>

## C. Legal Standards

### 1. For Establishing Anticipation

Section 102 of the Patent Act provides the statutory basis for an anticipation rejection and states *inter alia*:

A person shall be entitled to a patent unless

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(e) the invention was described in - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language. . . .

The Federal Circuit's test for anticipation has been set forth numerous times. "It is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention."<sup>16</sup> This standard has been reinforced. "To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter."<sup>17</sup> Further, "a finding of anticipation requires that the publication describe all of the elements of the claims, arranged as in the patented device."<sup>18</sup>

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<sup>12</sup> See *Mayes*, col. 1, ll. 10-13.

<sup>13</sup> See *Mayes*, col. 2, ll. 19-22.

<sup>14</sup> *Id.* at col. 15, ll. 31-33.

<sup>15</sup> *Id.* at col. 15, ll. 37-47.

<sup>16</sup> *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379 (Fed. Cir. 1986).

<sup>17</sup> *PPG Indus. Inc. v. Guardian Indus. Corp.*, 75 F.3d 1558, 1577 (Fed. Cir. 1996) (citations omitted).

<sup>18</sup> *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1349 (Fed. Cir. 1998) (emphasis added and citations omitted).

## 2. For Establishing Obviousness

Section 103(a) of the Patent Act provides the statutory basis for an obviousness rejection and reads as follows:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Courts have interpreted 35 U.S.C. § 103(a) as a question of law based on underlying facts. As the Federal Circuit stated:

Obviousness is ultimately a determination of law based on underlying determinations of fact. These underlying factual determinations include: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) the extent of any proffered objective indicia of nonobviousness.<sup>19</sup>

Once the scope of the prior art is ascertained, the content of the prior art must be properly combined. Initially, the Patent Office must show that there is a suggestion to combine the references.<sup>20</sup> After the combination has been made, for a *prima facie* case of obviousness, the combination must still teach or fairly suggest all of the claim elements.<sup>21</sup>

Some elements may be inherent within the reference. “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’”<sup>22</sup> “The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”<sup>23</sup> Thus, the possibility that an element may be derived from the reference is insufficient to establish that said element is inherent to the reference.

Whether an element is implicitly or explicitly taught by a reference or combination of references is open to interpretation. While the Patent Office is entitled to give claim terms their broadest reasonable interpretation, this interpretation is limited by a number of factors. First, the

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<sup>19</sup> *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 45 U.S.P.Q.2d (BNA) 1977, 1981 (Fed. Cir. 1998) (internal citations omitted).

<sup>20</sup> *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999).

<sup>21</sup> *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974); MPEP § 2143.03.

<sup>22</sup> *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (quoting *Cont'l Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991)).

<sup>23</sup> *Id.* (citation and quotation omitted).

interpretation must be consistent with the specification.<sup>24</sup> Second, the broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.<sup>25</sup> Finally, the interpretation must be reasonable.<sup>26</sup> This means that the words of the claim must be given their plain meaning unless Appellant has provided a clear definition in the specification.<sup>27</sup>

If a claim element is missing after the combination is made, then the combination does not render obvious the claimed invention, and the claims are allowable. As stated by the Federal Circuit, “[if] the PTO fails to meet this burden, then the Appellant is entitled to the patent.”<sup>28</sup>

**D. Claims 1, 7, 8, 13, 19, 20, 25, 31, 32, and 44-46 Are Not Anticipated By *Teodosiu* ‘336 Under 35 U.S.C. § 102(e)**

**1. *Teodosiu* ‘336 is Not a Proper Reference Under 35 U.S.C. § 102(e)**

The Appellants respectfully submit that *Teodosiu* ‘336 is not a proper reference under 35 U.S.C. §102(e). According to 35 U.S.C. § 102(e), a person shall be entitled to a patent unless “the invention was described in - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent.” The Appellants submit that *Teodosiu* ‘336 is not a proper reference under 35 U.S.C. § 102(e). In particular, the present application has a filing date of March 21, 2001. *Teodosiu* ‘336 has a filing date of September 13, 2001, well after the filing date of the present application. Nevertheless, *Teodosiu* ‘336 claims priority to *Teodosiu* ‘658 and *Teodosiu* ‘659, which were filed on November 22, 2000. According to Chapter 201.11 of the M.P.E.P., the “later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application); the disclosure of the invention in the prior application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. § 112.” The disclosure of *Teodosiu* ‘336 is different from the disclosures of both *Teodosiu* ‘658 and *Teodosiu* ‘659. Moreover, all the subject matter disclosed in *Teodosiu* ‘336 is not disclosed in *Teodosiu* ‘658 and *Teodosiu* ‘659 in accordance with the first paragraph of 35 U.S.C. § 112.

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<sup>24</sup> *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000); MPEP § 2111.

<sup>25</sup> *In re Cortright*, 165 F.3d 1353, 1359, (Fed. Cir. 1999); MPEP § 2111.

<sup>26</sup> *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004); MPEP § 2111.01.

<sup>27</sup> *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

<sup>28</sup> *In re Glaug*, 283 F.3d 1335, 1338 (Fed. Cir. 2002).

Nevertheless, in maintaining the rejection, the Patent Office asserted that the Appellants have “not provided any sufficient evidence showing the non-compliance.”<sup>29</sup> Even though the Appellants are not required to provide evidence as asserted by the Patent Office, the Appellants nevertheless submit ample evidence indicating that *Teodosiu* ‘336 includes subject matter which was not disclosed in either *Teodosiu* ‘658 or *Teodosiu* ‘659. For example, in maintaining the rejection of claim 1, the Patent Office states that paragraphs [0047] – [0049] and Figure 2, item #250 of *Teodosiu* ‘336 disclose the feature of “determining by the server that the first and second nodes are part of the same private network” as recited in claim 1.<sup>30</sup> The Appellants have reviewed both *Teodosiu* ‘658 and *Teodosiu* ‘659 and respectfully submit that the subject matter disclosed in paragraphs [0047] – [0049] of *Teodosiu* ‘336 is not disclosed in *Teodosiu* ‘658 or *Teodosiu* ‘659. Regarding the Figures, neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 includes Figures remotely similar to Figure 2 of *Teodosiu* ‘336 nor item #250. In fact, *Teodosiu* ‘659 does not include any Figures whatsoever. As a further example, in rejecting claims 7-9, 11, 44, and 47, the Patent Office states that paragraphs [0035] – [0037], [0044] – [0053] and [0057] – [0069] disclose the features recited in claims 7-9, 11, 44, and 47.<sup>31</sup> The Appellants have reviewed both *Teodosiu* ‘658 and *Teodosiu* ‘659 and respectfully submit that the subject matter disclosed in paragraphs [0045] – [0053] and paragraphs [0057] – [0069] of *Teodosiu* ‘336 is not disclosed in *Teodosiu* ‘658 or *Teodosiu* ‘659. Therefore, all the subject matter disclosed in *Teodosiu* ‘336 is not entitled to the filing date of *Teodosiu* ‘658 and *Teodosiu* ‘659, and *Teodosiu* ‘336 thus is not a proper reference under 35 U.S.C. § 102(e). In light of these problems with *Teodosiu* ‘336, the Appellants will address *Teodosiu* ‘658 and *Teodosiu* ‘659 in responding to the pending rejections.

## **2. Neither *Teodosiu* ‘658 Nor *Teodosiu* ‘659 Discloses All the Features Recited in Claims 1, 7, 8, 13, 19, 20, 25, 31, 32, and 44-46**

### **i. Neither *Teodosiu* ‘658 Nor *Teodosiu* ‘659 Discloses a Server Which Determines that First and Second Nodes are Part of the Same Private Network**

Neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 discloses all the features recited in claims 1, 7, 8, 13, 19, 20, 25, 31, 32, and 44-46. According to Chapter 2131 of the M.P.E.P., in order to

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<sup>29</sup> See Advisory Action mailed February 2, 2006, page 2.

<sup>30</sup> See Final Office Action mailed November 30, 2006, page 3.

<sup>31</sup> See Final Office Action mailed November 30, 2006, page 3.

anticipate a claim under 35 U.S.C. § 102, “the reference must teach every element of the claim.” The Appellants respectfully submit that neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 discloses each and every element recited in claims 1, 7, 8, 13, 19, 20, 25, 31, 32, and 44-46. Accordingly, these references cannot anticipate these claims. More specifically, claim 1 recites a method for optimizing private network file transfers comprising, among other features, “determining by the server that the first and second nodes are part of the same private network.” Claims 13 and 25 include similar features. The Appellants submit that neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 discloses or even suggests that a server determines that first and second nodes are part of the same private network. While these references do disclose a server which interacts with nodes, neither reference discloses or even suggests that the server determines that first and second nodes are part of the same private network. As such, claims 1, 13, and 25 are patentable over both *Teodosiu* ‘658 and *Teodosiu* ‘659.

**ii. Neither *Teodosiu* ‘658 Nor *Teodosiu* ‘659 Discloses that a User at a First Node Enters a Search Term for Finding a Particular File**

Claim 7 recites allowing a user of the first node to “enter search terms for finding a particular file.” Claims 19 and 31 include similar features. The Appellants submit that neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 discloses or suggests that a user at a first node enters a search term for finding a particular file. In fact, neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 discloses entering a search term to find anything, much less a particular file. As such, in addition to the reasons listed above, claims 7, 19, and 31 are patentable over *Teodosiu* ‘658 and *Teodosiu* ‘659.

**iii. Neither *Teodosiu* ‘658 Nor *Teodosiu* ‘659 Discloses Querying a Database with Search Terms to Find File Names that Match the Search Terms**

Claim 8 recites “querying a database containing file names with the search terms to find file names matching the search terms.” Claims 20 and 32 include similar features. The Appellants submit that neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 discloses or suggests querying a database with search terms to find file names that match the search terms. As mentioned above, neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 disclose anything relating to search terms. Thus, neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 can disclose querying a database with search terms to find file names which match search terms. Accordingly, in addition to the reasons noted above, claims 8, 20, and 32 are patentable over *Teodosiu* ‘658 and *Teodosiu* ‘659.



**iv. Neither *Teodosiu* ‘658 Nor *Teodosiu* ‘659 Discloses All the Features Recited in Claim 44**

Claim 44 recites “receiving by the server the search request from the first node including at least one search term identifying the file.” Claim 44 also recites “querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.” Claims 45 and 46 include similar features. As detailed above, neither *Teodosiu* ‘658 nor *Teodosiu* ‘659 discloses or suggests receiving a search term or querying a database using a search term, as recited in claims 44-46. Thus, in addition to the reasons noted above, claims 44-46 are patentable over *Teodosiu* ‘658 and *Teodosiu* ‘659.

**E. Claims 2-6, 9-12, 14-18, 21-24, 26-30, 33-43, and 47 Are Patentable Over *Teodosiu* ‘658 or *Teodosiu* ‘659 in View of *Mayes* Under 35 U.S.C. § 103(a)**

Claims 2-6, 9-12, 14-18, 21-24, 26-30, 33-43, and 47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Teodosiu* ‘336 in view of *Mayes*. The Appellants respectfully traverse the rejection. As indicated above, *Teodosiu* ‘336 is not a valid reference under 35 U.S.C. § 102(e). However, for purposes of addressing the rejection, the Appellants will address *Teodosiu* ‘658 and *Teodosiu* ‘659 in view of *Mayes*.

**1. Neither *Teodosiu* ‘658, *Teodosiu* ‘659, Nor *Mayes*, Either Alone or in Combination, Discloses or Suggests that a Second Node is Part of the Same Private Network as the First Node**

None of the cited references discloses all the features recited in claims 37. According to Chapter 2143.03 of the M.P.E.P., in order to “establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” Claim 37 recites a method for optimizing private network file transfers comprising, among other features, “determining that the second node is part of the same private network as the first node.” As detailed above, neither *Teodosiu* ‘658, nor *Teodosiu* ‘659, discloses or suggests determining that a second node is part of the same private network as a first node. In addition, *Mayes* does not disclose this feature.

In addition, claim 37 recites that the second node is “locally reachable by the first node.” The Appellants have reviewed the cited references and submit that none of the cited references, either alone or in combination, discloses or suggests that the second node is locally reachable by the first node. Thus, in addition to the reasons noted above, claim 37 is patentable over *Teodosiu* ‘658 or *Teodosiu* ‘659 in view of *Mayes*.

Regarding claims 2-5, 12, 14-17, 24, 26-29, 36, 38-41, and 43, as mentioned above, neither *Teodosiu* ‘658 nor *Teodosiu* ‘659, either singularly or in combination, discloses or suggests all the features recited in claims 1, 13, 25, and 37, the base claims from which claims 2-5, 12, 14-17, 24, 26-29, 36, 38-41, and 43 variously depend. Similarly, *Mayes* does not address the previously noted shortcomings of *Teodosiu* ‘658 and *Teodosiu* ‘659, namely, determining that a first node and a second node are part of the same private network. As such, these claims are patentable over *Teodosiu* ‘658 or *Teodosiu* ‘659 in view of *Mayes*.

**2. Neither *Teodosiu* ‘658, *Teodosiu* ‘659, Nor *Mayes*, Either Alone or in Combination, Discloses or Suggests Storing a Client IP Address, a Subnet Mask, and a Peer IP Address of a First Node and a Second Node in a Node Registry**

Claim 6 recites storing “the client IP address, a subnet mask, and a peer IP address of both the first and second nodes in a node registry.” Claims 18 and 30 include similar features. The Appellants submit that none of the references, either singularly or in combination, discloses or suggests the feature of storing a client IP address, a subnet mask, and a peer IP address of a first node and a second node in a node registry. In particular, none of the cited references discloses a node registry. Since none of the references discloses a node registry, it follows that none of the references can disclose storing a client IP address, a subnet mask, and a peer IP address of a first node and a second node in a node registry. Therefore, in addition to the reasons noted above, claims 6, 18, and 30 are patentable over *Teodosiu* ‘658 or *Teodosiu* ‘659 in view of *Mayes*.

**3. Neither *Teodosiu* ‘658, *Teodosiu* ‘659, Nor *Mayes*, Either Alone or in Combination, Discloses or Suggests that Since a First Node and a Second Node are Part of the Same Private Network, the Second Node is Locally Reachable by the First Node**

Claim 9 recites “determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node.” Claims 21 and 33 include

similar features. As discussed above, neither *Teodosiu* '658, *Teodosiu* '659, nor *Mayes* discloses or suggests determining that a second node is part of the same private node as the first node. In addition, as mentioned above, none of the references, either singularly or in combination, discloses or suggests that by virtue of a first node and a second node being part of the same private network, the second node is locally reachable by the first node. As such, claims 9, 21, and 33 are patentable over *Teodosiu* '658 or *Teodosiu* '659 in view of *Mayes* for these additional reasons. Similarly, claims 10, 22, and 34, which variously depend from claims 9, 21, and 33, are patentable for at least the same reasons along with the novel features recited therein.

**4. Neither *Teodosiu* '658, *Teodosiu* '659, Nor *Mayes*, Either Alone or in Combination, Discloses or Suggests Sorting Search Results First by Locally Reachable Nodes Followed by Directly Reachable Nodes**

Claim 11 recites “sorting the search results first by locally reachable nodes followed by the directly reachable nodes.” Claims 23, 35, and 42 include similar features. The Appellants have reviewed *Teodosiu* '658, *Teodosiu* '659, and *Mayes* and submit that none of these references discloses or suggests sorting search results first by “locally” reachable nodes followed by “directly” reachable nodes. Accordingly, in addition to the reasons noted above, claims 11, 23, 35, and 42 are patentable over *Teodosiu* '658 or *Teodosiu* '659 in view of *Mayes*.

**5. Neither *Teodosiu* '658, *Teodosiu* '659 Nor *Mayes*, Either Alone or in Combination, Discloses or Suggests all the Features of Claim 47**

Claim 47 recites “receiving by the server the search request from the first node including at least one search term identifying the file, and...querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.” The Appellants submit that neither *Teodosiu* '658, *Teodosiu* '659, nor *Mayes*, either singularly or in combination, discloses or suggests these features. As mentioned above, neither *Teodosiu* '658 nor *Teodosiu* '659 disclose entering a search term. Likewise, *Mayes* does not disclose anything about searching. As such, none of the references can disclose receiving a search request and querying a database using a search term. Therefore, in addition to the reasons noted above, claim 47 is patentable over *Teodosiu* '658 or *Teodosiu* '659 in view of *Mayes*.

## 6. There is No Motivation to Combine *Teodosiu* '658 with *Mayes*

Some inventions are combinations of known elements. One of the factors that makes an invention patentable is that there is no suggestion in the prior art to combine the known elements in the manner claimed. The Patent Office has the unenviable task of casting itself back to the time of the invention, examining the references, and determining if the invention was obvious to someone skilled in the art. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.<sup>32</sup> "There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art."<sup>33</sup>

There is no motivation to combine *Teodosiu* '658 with *Mayes*. Both the nature of the problem to be solved and the teachings in *Teodosiu* '658 differ from the problem to be solved and the teachings of *Mayes*. *Teodosiu* '658 relates to peer-to-peer networks.<sup>34</sup> More specifically, *Teodosiu* '658 addresses problems associated with the organization, management, and compatibility of peer-to-peer networks.<sup>35</sup> *Teodosiu* '658 addresses these problems by providing a peer-to-peer locator and tracking service.<sup>36</sup>

On the other hand, *Mayes* relates to address translation systems which map local Internet Protocol (IP) addresses used by hosts on a private network to globally unique IP addresses for communicating with hosts on the Internet.<sup>37</sup> *Mayes* addresses security problems associated with providing a translation system between a private network and the Internet.<sup>38</sup> *Mayes* addresses these problems by providing a system which employs a Network Address Translation protocol in conjunction with an adaptive security algorithm to keep unwanted packets out of a private network.<sup>39</sup> The Appellant submits that the problems and teachings associated with a peer-to-peer locator and tracking service are vastly different than the problems and teachings associated with providing a translation system between a private network and the Internet. Moreover, the Patent

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<sup>32</sup> *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d (BNA) 1430 (Fed. Cir. 1990).

<sup>33</sup> *In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d (BNA) 1453, 1457-58 (Fed. Cir. 1998).

<sup>34</sup> See *Teodosiu* '658, page 1, first paragraph.

<sup>35</sup> *Id.* at page 1, last three complete paragraphs.

<sup>36</sup> *Id.* at page 3, first complete paragraph.

<sup>37</sup> See *Mayes*, col. 1, ll. 10-13.

<sup>38</sup> *Id.* at col. 2, ll. 10-16.

<sup>39</sup> *Id.* at col. 2, ll. 19-22.

Office has failed to establish how the knowledge of one of ordinary skill in the art would provide the motivation to combine the references.

#### **7. There is No Motivation to Combine *Teodosiu* '659 with *Mayes***

There is no motivation to combine *Teodosiu* '659 with *Mayes*. More specifically, both the nature of the problem to be solved and the teachings in *Teodosiu* '659 differ from the problem to be solved and the teachings of *Mayes*. *Teodosiu* '659 relates to peer-to-peer networks.<sup>40</sup> In particular, *Teodosiu* '659 addresses problems associated with the compatibility between the Uniform Resource Locator naming scheme and the Domain Name System hierarchical domain scheme.<sup>41</sup> *Teodosiu* '659 addresses these problems by providing a peer-to-peer naming scheme.<sup>42</sup>

As outlined above, *Mayes* provides a system which employs a Network Address Translation protocol in conjunction with an adaptive security algorithm to keep unwanted packets out of a private network.<sup>43</sup> The Appellant submits that the problems and teachings associated with a peer-to-peer naming scheme differ greatly from the problems and teachings associated with providing a translation system between a private network and the Internet. Moreover, the Patent Office has failed to establish how the knowledge of one of ordinary skill in the art would provide the motivation to combine the references. Therefore, for this reason and the numerous reasons detailed above, claims 2-6, 9-12, 14-18, 21-24, 26-30, 33-43, and 47 are allowable.

#### **F. Conclusion**

As set forth above, none of the references, which are valid, discloses or suggests a server that determines that first and second nodes are part of the same private network. Furthermore, the Patent Office has not established any motivation to combine the references. As such, the Appellants request that the Board reverse the Examiner and instruct the Examiner to allow the claims.

Respectfully submitted,

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<sup>40</sup> See *Teodosiu* '659, page 1, first paragraph.


<sup>41</sup> See *Teodosiu* '659, paragraph bridging pages 1 and 2.

<sup>42</sup> *Id.* at paragraph bridging pages 2 and 3.

<sup>43</sup> See *Mayes*, col. 2, ll. 19-22.

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## **(8) CLAIMS APPENDIX**

1. A method for optimizing private network file transfers in a peer-to-peer public network, the peer-to-peer public network including a server and a plurality of nodes, wherein at least two of the plurality of nodes are part of a same private network, the method comprising the steps of:
  - (a) receiving by the server a search request from a first node of the plurality of nodes in the peer-to-peer public network for a file;
  - (b) determining by the server that the file is stored on a second node of the plurality of nodes in the peer-to-peer network;
  - (c) determining by the server that the first and second nodes are part of the same private network; and
  - (d) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.
2. The method of claim 1 further wherein step (a) includes the step of registering a client IP address, a subnet mask, and a peer IP address of both the first and second nodes with the server.
3. The method of claim 2 wherein step (a) further includes the step of registering with the server whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network or unreachable.
4. The method of claim 3 wherein step (a) further includes the step of determining that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.
5. The method of claim 4 wherein step (a) further includes the step of determining that a particular node is directly reachable from other nodes on the public network when the server can connect with the node using the node's client IP address.

6. The method of claim 2 wherein step (a) further includes the step of storing the client IP address, a subnet mask, and a peer IP address of both the first and second nodes in a node registry.
7. The method of claim 1 wherein step (a) further includes the step of allowing a user of the first node to enter search terms for finding a particular file.
8. The method of claim 7 wherein step (b) further includes the steps of querying a database containing file names with the search terms to find file names matching the search terms, and identifying nodes containing the matching file, including the second node.
9. The method of claim 4 wherein step (c) further includes the steps of:
  - (ii) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when
    - (1) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or
    - (2) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.
10. The method of claim 9 wherein step (c) further includes the steps of:
  - (ii) returning a list of search results from the server to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.
11. The method of claim 10 wherein step (c)(ii) further includes the step of sorting the search results first by locally reachable nodes followed by the directly reachable nodes.
12. The method of claim 10 wherein step (d) further includes the steps of:
  - (i) sending the client IP address of the second node to the first node such that the first nodes sends a request for the file to the second node using the client IP address of the second node; and



- (ii) sending the file from the second node to the first node using the client IP address of the first node.
- 13. A peer-to-peer public network, comprising
  - at least one server coupled to the public network;
  - a first plurality of nodes coupled to the public network;
  - a private network including first and second nodes of the first plurality of nodes coupled to the public network, wherein when the server receives a search request from the first node for a file, the server
    - determines that the file is stored on the second node,
    - determines that the first and second nodes are part of the same private network,
    - and
    - sends instructions to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.
- 14. The public network of claim 13 wherein a client IP address, a subnet mask, and a peer IP address of both the first and second nodes are registered with the server.
- 15. The public network of claim 14 wherein the server registers whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network or unreachable.
- 16. The public network of claim 15 wherein it is determined that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.
- 17. The public network of claim 16 wherein it is determined that a particular node is directly reachable from other nodes on the public network when the server can connect with the node using the node's client IP address.
- 18. The public network of claim 17 wherein the client IP address, a subnet mask, and a peer IP address of both the first and second nodes are stored in a node registry.

19. The public network of claim 13 wherein a user of the first node enters search terms for finding a particular file.
20. The public network of claim 18 wherein it is determined the file is stored on the second node by querying a database containing file names with the search terms to find file names matching the search terms, and identifying nodes containing the matching file, including the second node.
21. The public network of claim 16 wherein it is determined that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when 1) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or 2) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.
22. The public network of claim 21 wherein the server returns a list of search results is returned to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.
23. The public network of claim 22 wherein the search results are sorted first by locally reachable nodes followed by the directly reachable nodes.
24. The public network of claim 22 wherein the client IP address of the second node is used to send a request for the file from the first node to the second node, and the file from the second node is sent to the first node using the client IP address of the first node.
25. A computer readable medium containing program instructions for optimizing private network file transfers in a peer-to-peer public network, the peer-to-peer public network including a server and a plurality of nodes, wherein at least two of the plurality of nodes are part of a same private network, the program instructions for:

- (a) receiving by the server a search request from a first node of the plurality of nodes in the peer-to-peer public network for a file;
- (b) determining by the server that the file is stored on a second node of the plurality of nodes in the peer-to-peer public network;
- (c) determining by the server that the first and second nodes are part of the same private network; and
- (d) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.

26. The computer readable medium of claim 25 further wherein instruction (a) includes the instruction of registering a client IP address, a subnet mask, and a peer IP address of both the first and second nodes with the server.

27. The computer readable medium of claim 26 wherein instruction (a) further includes the instruction of registering with the server whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network or unreachable.

28. The computer readable medium of claim 27 wherein instruction (a) further includes the instruction of determining that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.

29. The computer readable medium of claim 28 wherein instruction (a) further includes the instruction of determining that a particular node is directly reachable from other nodes on the public network when the server can connect with the node using the node's client IP address.

30. The computer readable medium of claim 26 wherein instruction (a) further includes the instruction of storing the client IP address, a subnet mask, and a peer IP address of both the first and second nodes in a node registry.

31. The computer readable medium of claim 25 wherein instruction (a) further includes the instruction of allowing a user of the first node to enter search terms for finding a particular file.

32. The computer readable medium of claim 30 wherein instruction (b) further includes the instructions of querying a database containing file names with the search terms to find file names matching the search terms, and by identifying nodes containing the matching file, including the second node.

33. The computer readable medium of claim 28 wherein instruction (c) further includes the instructions of:

- (i) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when
  - (3) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or
  - (4) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.

34. The computer readable medium of claim 33 wherein instruction (c) further includes the instructions of:

- (ii) returning a list of search results from the server to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.

35. The computer readable medium of claim 34 wherein instruction (c)(ii) further includes the instruction of sorting the search results first by locally reachable nodes followed by the directly reachable nodes.

36. The computer readable medium of claim 34 wherein instruction (d) further includes the instructions of:

- (i) sending the client IP address of the second node to the first node such that the first node sends a request for the file to the second node using the client IP address of the second node; and
- (ii) sending the file from the second node to the first node using the client IP address of the first node.

37. A method for optimizing private network file transfers in a peer-to-peer public network, the peer-to-peer public network including a server and a plurality of nodes, wherein a first node and a second node of the plurality of nodes in the peer-to-peer public network are part of a same private network, the method comprising the steps of:

- (a) registering with the server whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network;
- (b) receiving a search request from the first node for a file;
- (c) determining that the file is stored on the second node;
- (d) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when
  - (i) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or
  - (ii) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.
- (e) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.

38. The method of claim 37 further wherein step (a) includes the step of registering a client IP address, a subnet mask, and a peer IP address of both the first and second nodes with the server.

39. The method of claim 38 wherein step (a) further includes the step of determining that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.

40. The method of claim 39 wherein step (a) further includes the step of determining that a particular node is directly reachable from other nodes on the public network when the server can connect with the node using the node's client IP address.

41. The method of claim 40 wherein step (d) further includes the step of returning a list of search results from the server to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.

42. The method of claim 41 wherein step (d) further includes the step of sorting the search results first by locally reachable nodes followed by the directly reachable nodes.

43. The method of claim 42 wherein step (e) further includes the steps of:

- (iii) sending the client IP address of the second node to the first node such that the first node sends a request for the file to the second node using the client IP address of the second node; and
- (iv) sending the file from the second node to the first node using the client IP address of the first node.

44. The method of claim 1 wherein step (a) comprises receiving by the server the search request from the first node including at least one search term identifying the file, and step (b) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.

45. The public network of claim 13 the search request from the first node comprises at least one search term identifying the file, and the server further operates to query a database relating

each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.

46. The computer readable medium of claim 25 wherein instruction (a) comprises receiving by the server the search request from the first node including at least one search term identifying the file, and instruction (b) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.

47. The method of claim 37 wherein step (b) comprises receiving by the server the search request from the first node including at least one search term identifying the file, and step (c) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.

**(9) EVIDENCE APPENDIX**

NONE



**(10) RELATED PROCEEDINGS APPENDIX**

NONE